

5.15 UTILITIES AND SERVICE SYSTEMS

This section provides an evaluation of the proposed project's impacts to wastewater and sewer facilities, water supply, solid waste facilities and energy systems within the project site and vicinity. The project site is located within Zone 25 of the Local Facilities Management Plan (LFMP). The following analysis is based on information provided in the following reports:

- *SB 610 Water Supply Assessment and Verification Report for Quarry Creek Project*, Carlsbad Municipal Water District, March 26, 2012 (Appendix Q-1);
- *Preliminary Sewer Report: Quarry Creek*, Project Design Consultants, October 2012 (Appendix Q-2);
- *Water System Analysis for Quarry Creek*, Dexter Wilson Engineering, Inc., March 23, 2012 (Appendix M-5) ;
- *Former South Quarry Amended Reclamation Plan Draft and Final EIR* (referred to herein as Reclamation Plan EIR), Helix Environmental Planning, Inc. September 2008 and February 2010, respectively;
- *Growth Management Program, LFMP Zone 25*, as amended, City of Carlsbad, August 20, 2012;
- *2010 Growth Management Plan, Monitoring Report*, City of Carlsbad, 2010;
- *2010 Urban Water Management Plan*, Carlsbad Municipal Water District, June 2011; and
- *Sewer Master Plan Update*, City of Carlsbad, March 2003.

The technical appendices are included on the attached CD found on the back cover of this Environmental Impact Report (EIR).

5.15.1 Existing Conditions

Wastewater Facilities

Wastewater treatment in the city is provided primarily at the Encina Wastewater Authority (EWA) Plant and to a lesser degree at the Meadowlark Water Reclamation Facility. Ownership, as well as treatment capacity of the Encina Wastewater Pollution Control Facility (EWPCF) is shared on a percentage basis by six independent agencies. Sewer service within the City of Carlsbad is provided by three of the sewer service agencies; the City of Carlsbad, Leucadia Wastewater District, and Vallecitos Water District. Zone 25 is located within the sewer drainage basin in the City of Carlsbad sewer service area. All sewage generated by demand from development within Zone 25 will be conveyed through the Vista-Carlsbad Interceptor sewer line to the EWPCF.

In November 2003, the City adopted the Carlsbad Sewer Master Plan Update which identified trunk facilities necessary for buildout of the City. Although Zone 25 is presently undeveloped, development within the zone will ultimately be served by the existing sewer trunk line which travels westerly along the Master Plan project site's north boundary. This line is fully operational and available for the development of Zone 25. The Vista-Carlsbad Interceptor travels west down the Buena Vista valley towards the coast then south to the EWPCF. The City of Carlsbad has capacity rights to this interceptor line. These capacity rights vary from zero percent per zero (0%/0) million gallons per day (MGD) up to 50%/33.6 MGD. The percentage of Carlsbad capacity rights increases in the downstream reaches (along the Zone 25 area), and

on to the EWPCF. In the section downstream from Zone 25, the interceptor is 36 inches in diameter (LFMP 2012).

Sewer improvements are provided on a project-by-project basis concurrent with development. Currently, the City of Carlsbad's sewer service area's pipelines are in compliance with the Growth Management Sewer Collection Services performance standard (LFMP 2012). The recently completed EWPCF Phase V expansion will accommodate the ultimate buildout demand for the Carlsbad Sewer Service Area. As a result, the EWPCF currently provides adequate capacity in excess of the adopted performance standard (LFMP 2012). Carlsbad's calendar year 2010 average annual sewer flows of 8.12 MGD represents 79 percent of the city's 10.26 MGD capacity rights.

Water Supply

The entire project area is located within the Carlsbad Municipal Water District (CMWD) service area. CMWD covers an area of 20,682 acres, approximately 32.32 square miles, and provides water service to most of the City of Carlsbad. CMWD receives all of its potable water supply from the San Diego County Water Authority (SDCWA) through four connections. Water within CMWD is delivered through 440 miles of pipeline, 57 pressure regulating stations, five pumping stations, ten storage tanks, and one 195-million-gallon reservoir.

Based on San Diego Association of Government (SANDAG) growth rate projections, in 2010, CMWD's service area population was 84,838 and it is projected to increase to 101,402 in 2035. The number of service accounts in 2010 was 27,479 with a total demand of 15,076 acre feet per year (AFY). By 2035, the number of service accounts is projected to increase to 31,485 with a total demand of 22,122 AFY (CMWD 2012).

CMWD has developed a five phase recycled water master plan for production and distribution within its service area. Phase I and Phase II have been completed and is capable of meeting a total demand in excess of 5,000 AFY with a current demand of approximately 3,600 AFY. Planning has been initiated on Phase III of the master plan, which will be able to meet an additional demand of 3,300 AFY for a total of 8,300 AFY.

The CMWD's current 2010 Urban Water Management Plan (UWMP) was adopted on June 7, 2011, and was subsequently submitted to the California Department of Water Resources (DWR) on July 6, 2011. CMWD is one of 24 member agencies of the SDCWA, and presently has two Board members on the 36-member Board of Directors. Member agency status entitles CMWD to directly purchase water from SDCWA on a wholesale basis. CMWD also looks to the SDCWA to insure, to the best of its ability, that adequate amounts of imported water will be available to satisfy future potable water requirements.

The SDCWA annexed to the Metropolitan Water District of Southern California (MWD) in 1946 and is now represented on the MWD Board by four directors, as its largest customer. SDCWA purchases water from MWD and other sources for resale to its 24 member agencies. SDCWA's water supplies and management programs are discussed in their 2010 UWMP. The SDCWA source of water is primarily imported water from the Colorado River and State Water Project. To reduce its dependency on MWD and diversify its supplies, the SDCWA in recent years has undertaken several initiatives including:

- Imperial Irrigation District (IID) Water Transfer;
- All-American and Coachella Canal (AAC and CC) Lining Conserved Water; and
- Seawater Desalination Action Plan and Water Transfer and Banking Program.

5.15 Utilities and Service Systems

Historical and projected water demands through 2035 were obtained from CMWD's 2010 UWMP. The projected water demands for CMWD are based on SANDAG's population growth rate projections through the year 2035 combined with water unit demand criteria developed by CMWD. The historical and projected potable water demands for the CMWD service area are shown in Table 5.15-1.

Table 5.15-1. Past, Current, and Projected Potable Water Use (Acre Feet)

Water Use Sector	2005	2010	2015	2020	2025	2030	2035
Single family	9,009	7,965	9,740	9,279	9,367	9,592	9,699
Multi-family	1,963	1,769	3,219	4,285	5,292	6,604	7,416
Commercial/Industrial	3,695	2,868	3,700	3,887	4,369	4,296	4,235
Institutional/Governmental	162	122	200	122	122	122	122
Landscape	4,214	1,932	3,000	2,656	1,797	1,000	500
Agriculture	716	420	422	300	200	150	150
Other	0	0	0	0	0	0	0
Total	19,759	15,076	20,281	20,529	21,147	21,764	22,122

Source: CMWD 2012.

Recycled Water

Recycled water is supplied to the CMWD from three treatment sources and is distributed through a separate recycled water distribution system to developed areas within the CMWD service area. The system is capable of supplying over 5,000 AFY within the CMWD service area. Recycled water is delivered to over 370 irrigation sites including golf courses, parks, median strips, common area landscaping in residential and commercial developments, and other landscaped areas. In 2010, 3,517 AFY of recycled water was delivered, which represented approximately 16 percent of the total water use in 2010. A 12-inch diameter recycled water distribution pipeline at Tamarack Avenue and Harwich Drive is near the Master Plan project site. The project applicant will be required to extend the pipeline to the project site in order to provide recycled water for Home Owner Association-maintained landscaped sites and park areas. The proposed project will be able to receive recycled water from the existing recycled water distribution pipeline system in Tamarack Avenue.

Groundwater and Surface Water

CMWD currently does not use any local groundwater or surface water supplies, although in the past both types of water sources have been used. This included rights to Mission Basin of the San Luis Rey River of five cubic feet per second (cfs) up to 2,382 AFY of groundwater, pre-1914 appropriative rights, and an additional 750 AFY, up to 5 cfs, that was permitted in 1938. Additionally, there were surface water rights for 150 AF annually which were held from Calavera Creek. In addition, CMWD obtained a permit for surface water in the amount of 25 acre feet (AF) from Agua Hedionda Creek. These sources of water are costly to develop and maintain and therefore are currently not part of CMWD's water supply mix. However, CMWD will be pursuing investigations on re-establishing these sources.

Storm Drain Systems

The project site is located entirely within the Buena Vista Lagoon watershed of the Carlsbad Hydrologic Unit. The storm water within this watershed flows through Buena Vista Creek, which extends generally east-west through the Reclamation parcel, and continues west (north of the Panhandle parcel) before

ultimately entering Buena Vista Lagoon approximately two miles downstream of the project site. The entirety of the project site drains into Buena Vista Creek. Due to the undeveloped nature of the project site, few drainage facilities exist within the project site. The Carlsbad Growth Management Program requires that drainage facilities be provided as required by the City concurrent with development. All future development within the project site will be required to construct necessary storm drain facilities identified in the Drainage Master Plan (Figure 5.9-2) and the LFMP. Figure 5.9-3 (see EIR Section 5.9 Hydrology and Water Quality) illustrates the Storm Water Management Plan.

Solid Waste

Solid waste disposal for the proposed project will be provided by Coast Waste Management, a private company which contracts with the City of Carlsbad to provide such services. Solid waste collected in the City of Carlsbad is taken to Palomar Transfer Station located at 5960 El Camino Real in Carlsbad. Palomar Transfer Station is a large-volume transfer/processing facility which is permitted to accept 800 tons of solid waste per day. Palomar Transfer Station accepts mixed municipal, construction/demolition, green materials, and industrial waste (CalRecycle 2012). Solid waste is then transferred to Otay Landfill located at 1700 Maxwell Road in Chula Vista, CA (Rodrigo Huertero, Manager of Palomar Transfer Station, personal communication, May 30, 2012). Otay Landfill is a Class III landfill and accepts green materials, mixed municipal waste, construction/demolition waste, agricultural waste material, sludge (biosolids), and tires. Otay Landfill is permitted to accept 5,830 tons of waste per day. It has a maximum permitted capacity of 63,377,974 cubic yards. According to CalRecycle, the landfill has a remaining capacity of 33,070,879 cubic yards. Anticipated closure date is April 30, 2021 (CalRecycle).

Energy

San Diego Gas and Electric (SDG&E), is the service provider for gas and electric services within the City of Carlsbad. SDG&E is a regulated public utility that provides energy service to 3.5 million people through 1.4 million electric meters and 850,000 natural gas meters in San Diego and southern Orange counties. SDG&E's service area spans 4,100 square miles. There is currently no electrical or natural gas energy consumption within the project site. The project site is undeveloped and does not contain electric and gas infrastructure; however, there is a network of power grid lines which supply sufficient electrical power service to the surrounding developed areas adjacent to the project site. There is no major deficient or functional problem in the power and gas supply facilities within the project area.

SDG&E has developed several energy-efficiency programs for residential, non-residential, new construction and low-income subscribers. These include rebate and cash incentive programs for completion of energy-efficiency projects in residences and businesses, providing energy-efficient solutions for new developments, as well as programs that aid low-income customers to purchase energy-efficient refrigerators and outdoor lighting. SDG&E will continue to promote the resourceful use of energy and, in turn, a reduction in electrical uses and electricity.

5.15.2 Regulatory Setting

State

California Integrated Waste Management Act of 1989 (AB 939)

Solid waste regulation in California is governed by the California Integrated Waste Management Act of 1989, which is commonly known as Assembly Bill (AB) 939. The act, codified into the California Public

Resources Code (PRC), emphasizes a reduction of waste disposed in California landfills. To achieve a reduction of waste in California landfills, AB 939 requires all city and county plans to include a waste diversion schedule with the goals to divert 25 percent of solid waste from landfills by 1995 and divert 50 percent of solid waste from landfills by the year 2000. To achieve these goals, AB 939 emphasizes that cities and counties reduce the production, recycle, and reuse solid waste. The California Solid Waste Reuse and Recycling Access Act of 1991 stipulates that each jurisdiction must have adopted an ordinance by September 1, 1994, requiring any development study area for which a building permit application is submitted (after the effective date of this ordinance) to provide an adequate storage area for collection and removal of recyclable materials. The proposed project would be subject to the requirements of AB 939, as applicable.

California Urban Water Management Planning Act

The Urban Water Management Planning Act was established by AB 797 on September 21, 1983. Passage of this law was recognition by state legislators that water is a limited resource and a declaration that efficient water use and conservation would be actively pursued throughout the state. The law requires water suppliers in California, providing water for municipal purposes either directly or indirectly to more than 3,000 people, prepare and adopt a specific plan every five years which defines their current and future water use, sources of supply and its reliability, and existing conservation measures.

California Senate Bills 610/221

California Senate Bill (SB) 610 states that water supply assessments must be furnished to local governments for inclusion in environmental documentation for certain projects subject to the California Environmental Quality Act (CEQA). SB 610 takes a significant step toward managing the demand of California's water supply as it provides regulations and incentives to preserve and protect future water needs. The intent of this bill is to coordinate local water supply and land use decisions to help provide California's cities, farms, rural communities, and industrial developments with adequate water supplies. With the introduction of SB 610, any project under CEQA shall provide a Water Supply Assessment (WSA) as defined in the Water Code Section 10912. Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. SB 221 is intended as a 'fail safe' mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs when it should – before construction begins.

Title 24, California's Energy Efficiency Standards for Residential Buildings

Title 24, Part 6, of the California Code of Regulations (CCR) establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating/ventilation/air condition and water heating systems), indoor and outdoor lighting, and illuminated signs. Additionally, Title 24, Part II, of the CCR, the Green Building Standards Code first published in July 2008 and updated for publication in 2010, codifies voluntary "reach" standards for energy efficiency, as compared with the mandatory Standards, for newly constructed residential and nonresidential buildings. The Green Building Standards Code established tiered energy performance levels of 15 percent and 30 percent more stringent than the mandatory 2008 Standards. Local jurisdictions may adopt the Green Building Standards Code as mandatory at the local level. Local jurisdictions may also adopt privately developed green building standards that are at least as stringent as the Building Energy Efficiency Standards and the Green Building Standards Code mandatory provisions.

Local

Local Facilities Management Plan

The purpose of the LFMP is to provide a plan and financing structure to ensure that utilities and service systems are provided to accommodate development within Zone 25. The LFMP is prepared as a requirement of the City's adopted Growth Management Plan, and in accordance with Chapter 21.90 (Growth Management) of the Carlsbad Municipal Code and Citywide Facilities and Improvements Plan of 1986. The LFMP provides a phasing schedule to determine approximate threshold years for construction or upgrading various public facilities to maintain compliance with the performance standards adopted in the Growth Management Program. The City monitors development within the zone to ensure Growth Management Standards are maintained. The LFMP also contains general and special conditions of approval to ensure compliance with the performance standards. Utilities and service systems addressed in this section and as required by the City's Growth Management Program include wastewater, drainage, fire, schools, sewer, and water. Overall, the utilities and service system demands are presently minimal and all Performance Standards are currently being met with the exception of drainage facilities.

5.15.3 Project Impacts

5.15.3.1 Thresholds of Significance

Appendix G of the *CEQA Guidelines* is used to provide direction for determination of a significant public services and utilities impact from the proposed project. For the purpose of this EIR, a significant impact would occur if the proposed project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the study area from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the study area that has adequate capacity to serve the study area's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the study area's solid waste disposal needs;
- Comply with federal, state, and local statutes and regulations related to solid waste;
- Require the construction of new energy facilities, the construction of which may cause significant environmental impacts; or
- Use of energy in a wasteful or unnecessary manner.

5.15.3.2 Environmental Impacts

Sewer and Wastewater Facilities

The project site is currently undeveloped with no sewer infrastructure. Pursuant to the LFMP for Zone 25, the proposed project is required to provide gravity sewer connections in the following locations: (1) the southern boundary of Zone 25 and (2) eastern boundary of Zone 25 at the terminus of Marron Road. The anticipated sewer service facilities to be constructed in conjunction with the proposed project are shown on Figures 5.15-1 and 5.15-2. As a separate project that will be implemented irrespective of the proposed project (i.e., this City-initiated project is not needed in order to provide sewer service to the project), the City of Carlsbad will be installing a new sewer main in Simsbury Court and abandoning the existing Simsbury sewer lift station. The proposed project will provide a sewer main extension from Street “A” within the Master Plan project site to the right-of-way Simsbury Court at the southern boundary of the project site (see Figures 5.15-1 and 5.15-2). The following sewer improvements are required with implementation of the proposed project:

- Sewage collection from the eastern section of Zone 25 (Quarry Creek project site) will occur through a variety of sewer pipes ultimately connecting to the Vista/Carlsbad Interceptor northwest of the project site.
- The proposed project will provide a gravity sewer line stub to allow the city to eliminate the Simsbury sewer lift station.

The proposed project will provide a sewer stub to the project site’s eastern boundary at the terminus of the existing Marron Road so the existing private sewer lift station can be eliminated with a gravity sewer system. Existing and off-site sewer system improvements are shown on Figures 5.15-1 and 5.15-2. The proposed project’s sewer collection plan includes capacity and design alignment (extended length to the south) that will accept the existing flow from the Simsbury lift station and the potential future connection of the lift station in the Quarry Creek Plaza shopping center, located off-site to the south and east of the project site. This would allow for the abandonment of these temporary lift stations. Abandonment of these lift stations is not required in order to provide sewer service to the proposed project. The abandonment will be accomplished independently of this project.

As part of the proposed sewer improvements, the City of Carlsbad will be installing a new sewer main in Simsbury Court and abandoning the existing Simsbury sewer lift station. The proposed sewer system for the project will be located in Street “A,” Street “B,” and through Master Plan Lot 11 and will connect into the existing 36-inch Buena Vista Creek sewer main in Haymar Drive to the north (see Figures 5.15-1 and 5.15-2). The proposed project will provide a sewer main up to the existing 8-inch sewer stub in Marron Road. Because Street “B” crosses the Buena Vista Creek, a vehicular bridge will be constructed as part of the Master Plan project. The proposed sewer main in Street “B” will be suspended on the roadway bridge. The proposed sewer main will not encroach into the 100-year water surface elevation (Project Design Consultants 2012).

All sewage generated by demand from development within the project site will be conveyed through the Buena Vista sewer line and to the Encina Wastewater Pollution Control Facility. The City’s current Sewer Master Plan established 220 GPD/DU as the unit flow generation factor as a basis for projecting the average sewer flows for residential use. The proposed project includes the development of 656 residential units, community facilities, and recreational areas. Based on the established generation rate, the proposed project would generate approximately 144,320 GPD of effluent. The total projected buildout of Zone 25, which includes several other parcels in addition to the project site, is 665 equivalent density unit (EDU)

residential units and 15 EDU associated with community facilities/recreation. According to the LFMP, the projected total wastewater generation for Zone 25 is 149,600 GPD.

The City of Carlsbad Sewer Master Plan indicates that the City's projected buildout flow is approximately 9.87 MGD. Additionally, the City has purchased capacity rights to 10.26 MGD in the Encina expansion project (City of Carlsbad 2010), which ensures adequate wastewater treatment is available to accommodate any unanticipated increase in future sewer flows. With the completion of the Encina Phase V expansion, adequate sewer treatment capacity exists to ensure compliance with the Growth Management wastewater performance standard through buildout of the Carlsbad sewer service area (LFMP 2012). Additionally, all development within the project site will be required to pay the appropriate Sewer Connection Fees and Sewer Benefit Area Fees (or receive credit for construction of such facilities) prior to issuance of any building permits for such development.

With the exception of impacts related to biological resources, sewer infrastructure improvements would not involve a significant, physical impact to the environment. The biological impacts associated with these improvements have been identified as less than significant with implementation of appropriate mitigation measures (see Section 5.4, Biological Resources). Also, to the degree that these improvements would involve short-term impacts associated with construction activities, the impact has been addressed in previous EIR sections Air Quality, Greenhouse Gas Emissions, Noise, and Water Quality.

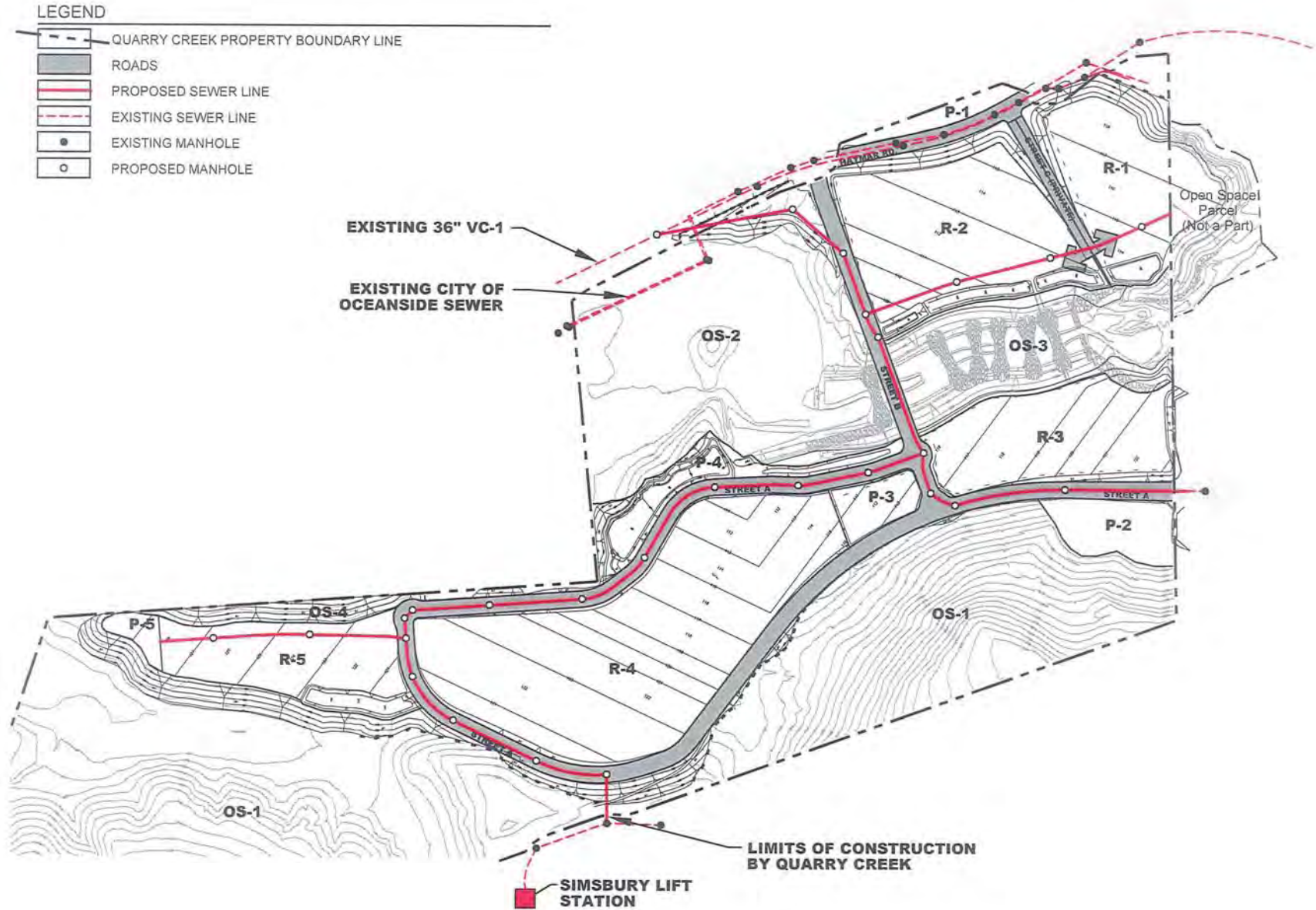
Water Supply and Facilities

To serve the proposed project the developer will need to extend pipelines from existing water and recycled water pipelines located adjacent to or near the proposed project site to use areas within the project site. Figures 5.15-2 and 5.15-3 illustrate the proposed water master plan. Two pressure reducing stations on the potable water pipelines are required near the south boundary of the project site to reduce the supply water pressure to meet CMWD pressure requirements to customers. The principal source of supply to the proposed project will be from a Calavera Hills development tie-in south of the project site.

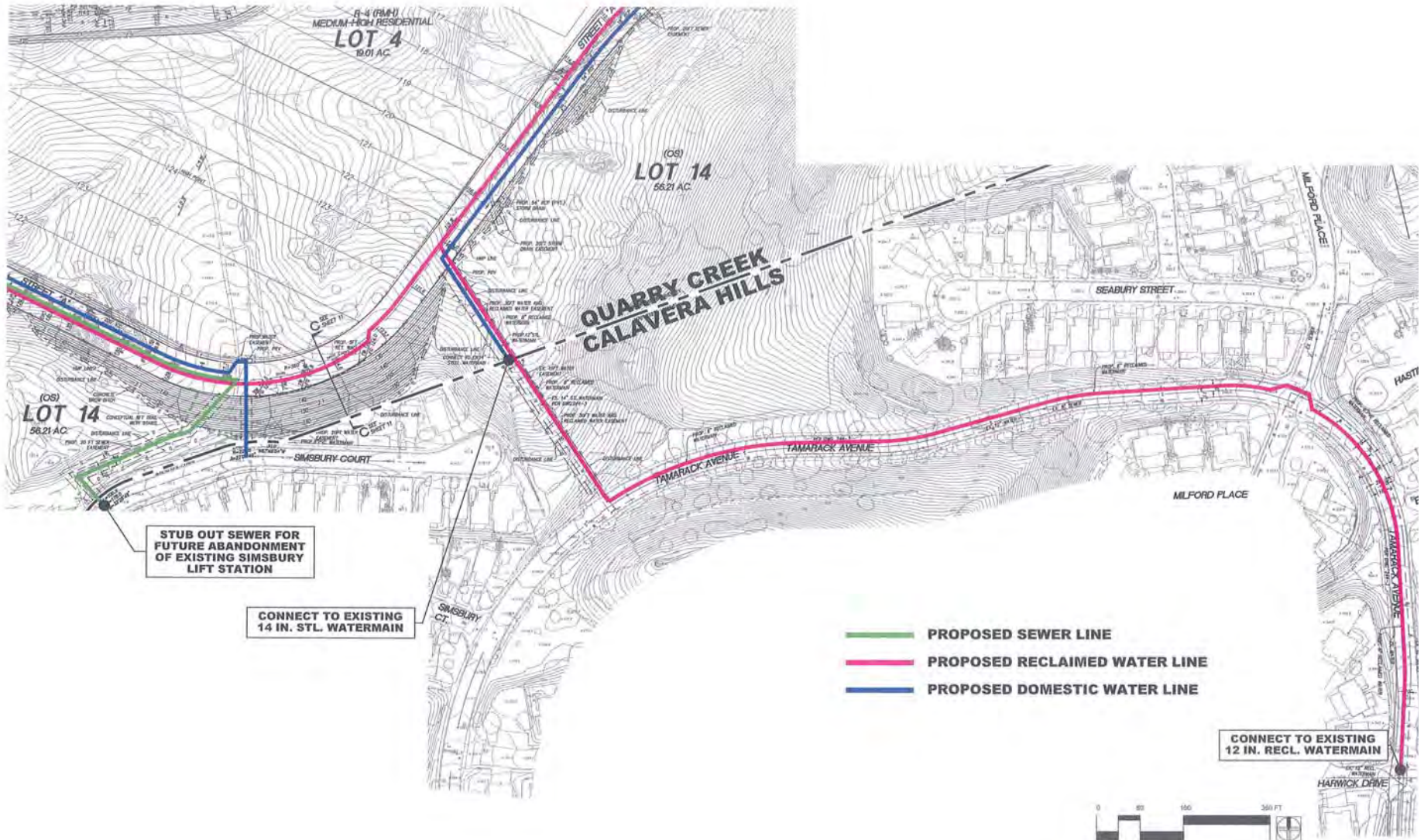
CMWD conducted a water supply assessment for the proposed project pursuant to SB 610. The analysis is summarized below. Because the proposed project is primarily residential, water demand is based on demand unit criteria applied to the residential units that account for domestic use and landscape irrigation. Homeowner Association maintained landscaping areas, parkway landscaping, recreation lot, and recreation areas will be irrigated with recycled water obtained from CMWD's recycled water system.

The unit demand criteria for water demand determinations were obtained from City of Carlsbad Engineering Standards, Volume 2 Potable and Recycled Water Standards, Part 3.2. CMWD's water demand criterion for single family residential (eight dwelling units (du) per acre or less) is 550 gallons per day (GPD) and multi-family is 250 GPD. Multi-family includes multiple units (apartments) and multiple planned development units (condominiums, triplex, etc.). The public use areas were assigned one dwelling unit to account for restrooms. In addition, site landscaping was applied a unit demand criteria of 2,000 GPD per acre.

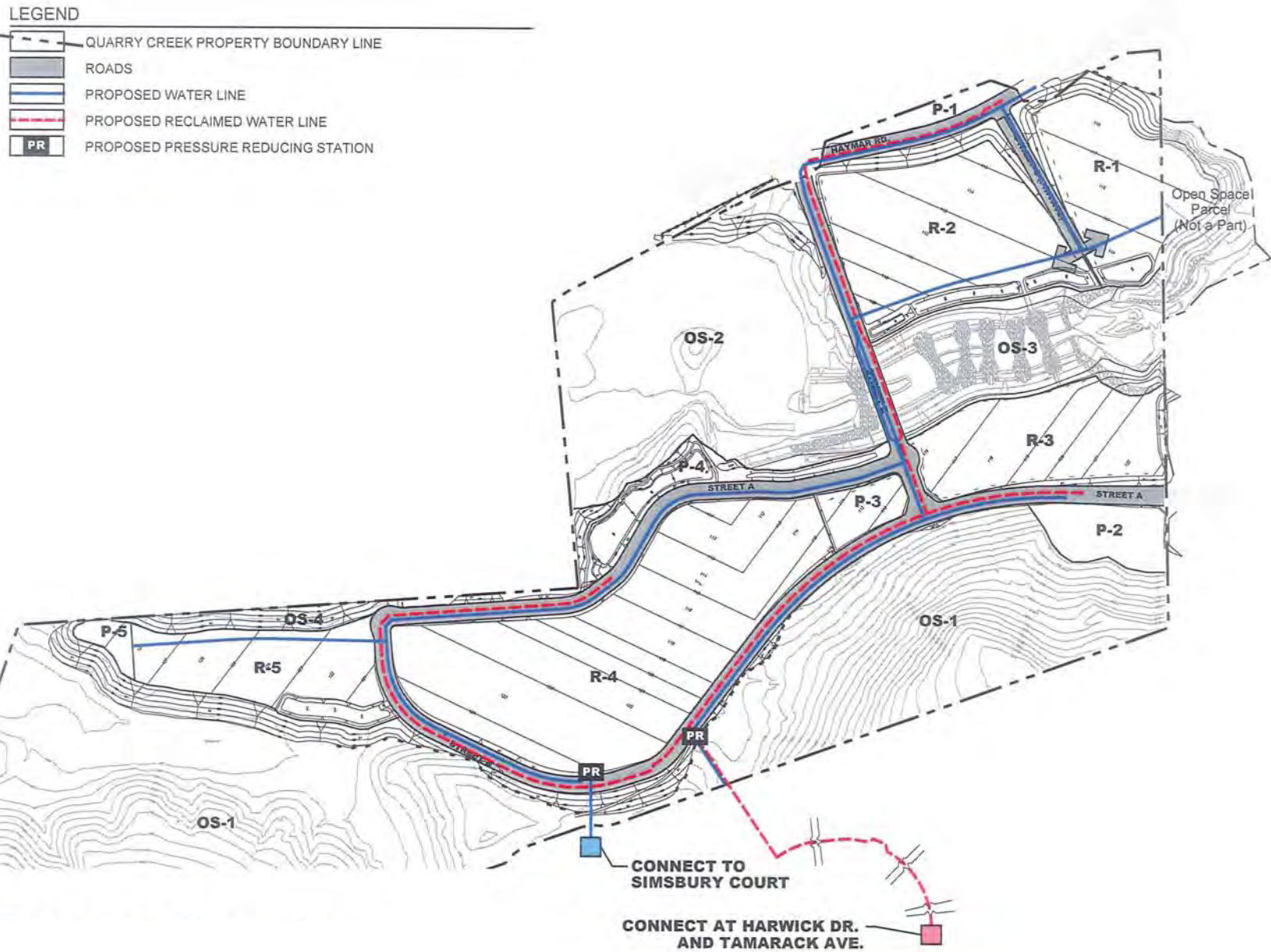
Table 5.15-2 shows the estimated water demand for the proposed project. As shown in Table 5.15-2, the estimated water demand is 180,900 GPD or 203 AFY.



Existing and Proposed Master Sewer Plan
FIGURE 5.15-1



Proposed Sewer and Water Lines
FIGURE 5.15-2



Proposed Master Water Plan
FIGURE 5.15-3

Table 5.15-2. Projected Water Demand for Proposed Project

Planning Area	Land Use	Dwelling Units or Acreage	Unit Demand Criteria	Average Water Demand (GPD)
R-1	High density affordable apartments (22 du per acre)	129 units	250 GPD/unit	32,250
R-2	High density condominiums (22 du per acre)	202 units	250 GPD/unit	50,500
R-3, R-4, R-5	Medium high, single family residential (12 du per acre)	325 units	250 GPD/unit	81,250
P-1, P-5	Community facilities	1.5 acres landscaping	2,000 GPD/acre	3,000
P-2	Community facility site (Day Care)	1 unit plus 2.1 acres landscaping	250 GPD/unit 2,000 GPD/acre	4,450
P-3	Community recreation area (park, pool, restroom)	1 unit plus 1.3 acres landscaping	250 GPD/unit 2,000 GPD/acre	2,850
P-4	Trail, View Area, Water Quality Basin	3.3 acres	2,000 GPD/acre	6,600
OS-1, OS-2, OS-3, OS-4	Open space	87.7 acres (5± acres will have temporary irrigation for CSS revegetation)	0 GPD/acre	0
Total				180,900 GPD

Source: CMWD 2012.

The City of Carlsbad Growth Management Plan database used in CMWD's 2003 Water Master Plan is based on the City's LFMP data. The proposed project is located exclusively in Zone 25, where there is one existing unit plus the proposed project. The 2003 Water Master Plan referenced a total of 130 single family dwelling units (i.e., <4 units/acre) would be constructed in Zone 25, resulting in an estimated total demand of 71,500 GPD or 80 AFY. The 2010 UWMP used a 2009-2010 growth projection, which indicated the number of units in Zone 25 at 626 single family dwelling units resulting in a total demand of 344,300 GPD or 386 AFY, which is greater than the proposed project demand of 180,900 GPD or 203 AFY.

The CMWD, SDCWA and the MWD are implementing plans that include projects and programs to ensure that the existing and planned water users within the CMWD service area have an adequate supply. The forecasted water demands shown in Table 5.15-1 are compared with projected supplies within the CMWD service area in Table 5.15-3 below. This demonstrates that with implementation of the projects discussed in the CMWD and SDCWA planning documents there will be adequate water supplies to serve the proposed project along with existing and other future planned development projects or uses.

Table 5.15-3. CMWD Projected Water Supply and Demand During Normal Year for Period 2015 to 2035 (AFY)

Supply Source	2015	2020	2025	2030	2035
SDCWA	21,348	21,610	22,260	22,909	23,286
CMWD Produced Groundwater	0	1,000	1,000	1,000	1,000
Recycled water	5,000	6,500	6,500	6,500	6,500
Total	26,348	29,110	29,760	30,409	30,786
Estimated demand	20,281	20,529	21,147	21,764	22,122

Source: CMWD 2012.

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The current and projected water supplies are compared to the demands for a single dry year for CMWD in Table 5.15-4. SDCWA is planning on providing additional supplies during dry years to meet higher demands during those dry years (CMWD 2012). CMWD has not developed a projection for their dry year demands, but anticipates a similar magnitude increase in demands and supplies from SDCWA (CMWD 2012).

Table 5.15-4. Supply and Demand Comparison-Single Dry Year (AFY)

Supply and Demand	2015	2020	2025	2030	2035
Supply Totals	26,348	29,110	29,760	30,409	30,786
Demand Totals	26,348	28,110	28,760	29,409	29,786
Difference (Supply Minus Demand)	0	1,000	1,000	1,000	1,000
Difference as a Percent of Supply	0	3.4	3.4	3.3	3.2
Difference as a Percent of Demand	0	3.6	3.5	3.4	3.4

Source: CMWD 2012.

The projected water supplies are compared to the demands for multiple dry years for CMWD in Table 5.15-5. The additional demands during dry years and the resulting increased supply from SDCWA have not been projected by CMWD, but are expected to be of a similar magnitude that is projected by SDCWA for the region.

As shown in Tables 5.15-3, 5.15-4, and 5.15-5, water supplies are expected to be adequate to meet future demands in dry-year periods for the CMWD. An adequate supply is confirmed within the SDCWA 2010 UWMP (CMWD 2012). The project's impact associated with water demand will be less than significant.

Table 5.15-5. Supply and Demand Comparison – Multiple Dry Year Events (AFY)

Dry Year Event		Supply and Demand Comparison Multiple Dry Year Events				
		2015	2020	2025	2030	2035
Multiple-dry year first year supply	Supply totals	26,348	29,110	29,760	30,409	30,786
	Demand totals	26,348	28,110	28,760	29,409	29,786
	Difference	0	1,000	1,000	1,000	1,000
	Difference as percent of supply	0	3.4	3.4	3.3	3.2
	Difference as percent of demand	0	3.6	3.5	3.4	3.4
Multiple-dry year second year supply	Supply totals	26,879	29,239	29,888	30,484	(a)
	Demand totals	26,691	28,239	29,888	29,484	(a)
	Difference	187	1,000	1,000	1,000	(a)
	Difference as percent of supply	0.7	3.4	3.3	3.3	(a)
	Difference as percent of demand	0.7	3.5	3.5	3.4	(a)
Multiple-dry year third year supply	Supply totals	27,420	29,368	30,018	30,560	(a)
	Demand totals	27,039	28,368	29,018	29,560	(a)
	Difference	381	1,000	1,000	1,000	(a)
	Difference as percent of supply	1.4	3.4	3.3	3.3	(a)
	Difference as percent of demand	1.4	3.5	3.4	3.4	(a)

Source: CMWD 2012.

(a) Not included because it is beyond the planning horizon for this plan.

With the exception of impacts related to biological resources, water infrastructure improvements would not involve a significant, physical impact to the environment. The biological impacts associated with these improvements have been identified as less than significant with implementation of appropriate mitigation measures (see Section 5.4, Biological Resources). Also, to the degree that these improvements would involve short-term impacts associated with construction activities, the impact has been addressed in previous EIR sections Air Quality, Greenhouse Gas Emissions, Noise and Water Quality.

Stormwater Facilities

Few urban drainage facilities presently exist within the project site. This is due to the fact that the area is presently undeveloped and drainage facilities will be constructed as development progresses. The Carlsbad Growth Management program requires that drainage facilities be provided as required by the City concurrent with development. All future development within the Zone 25 will be required to construct necessary storm drain facilities identified in the Drainage Master Plan (Figure 5.9-2) and the LFMP. Any facilities necessary to accommodate future development must be guaranteed prior to the recordation of the first final map, issuance of a grading permit or building permit, whichever occurs first in Zone 25. Prior to the recordation of any final map, issuance of any grading permit or building permit, whichever occurs first for any specific subdrainage area within Zone 25, the developers of that project are required to pay City of Carlsbad drainage fees. Additionally, prior to the recordation of any final map, issuance of a grading permit or building permit, whichever occurs first for any project within Zone 25, the developers of that project are required to financially guarantee the construction of the storm drainage facilities that are determined by the City Engineer to be affected by the development and required for that phase of development that is proceeding.

With the exception of impacts related to biological resources, drainage and stormwater improvements would not involve a significant, physical impact to the environment. The biological impacts associated with these improvements have been identified as less than significant with implementation of appropriate mitigation measures (see Section 5.4, Biological Resources). Also, to the degree that these improvements would involve short-term impacts associated with construction activities, the impact has been addressed in previous EIR sections Air Quality, Greenhouse Gas Emissions, Noise, and Water Quality.

The project will be required to meet special conditions as identified in the LFMP for Zone 25. Also, mitigation measures identified in preceding sections of this EIR (e.g., Section 5.9, Hydrology and Water Quality) would reduce the environmental impact associated with construction of drainage facilities on-site to a level less than significant.

Solid Waste Facilities

As discussed previously, the project site is served by the Palomar Transfer Station and Otay Landfill. Palomar Transfer Station is permitted to accept 800 tons of solid waste per day. Otay landfill is permitted to accept 5,830 tons of waste per day. The landfill has a maximum permitted capacity of 63,377,974 cubic yards. According to CalRecycle, the landfill has a remaining capacity of 33,070,879 cubic yards. Anticipated closure date is April 30, 2021 (CalRecycle).

Estimated solid waste generation rates for the City of Carlsbad are unknown. Average waste generation mixes vary between land uses. However, California Air Pollution Control Officers Association's (CAPCOA) has published data from CalRecycle by region which estimates 0.46 tons of trash per person is generated for multi-family developments and 0.41 tons per person in single family homes within San Diego. Also, it is estimated that an average of 2.349 residents will occupy each dwelling unit. Therefore,

the residential component of the project is expected to generate approximately 814.98 tons of solid waste per year (approximately 2.232 tons per day).

For the purpose of this analysis, it is assumed that daycare facilities would generate waste equivalent to Education Institutions, which generate on average 0.12 tons/employee/year. The project traffic study indicates that the proposed daycare facility will generate 150 trips per day. The ITE Traffic Generation Manual indicates that a project of this size would generate roughly 28.3 trips per daycare employee which means the proposed daycare facility could have up to 5.3 employees or roughly six employees. Therefore, using the unit of employees, the project would be expected to generate around 1.01 tons of waste per year (0.00276 tons per day). Given this, it is expected that the overall project could produce 815.99 tons of waste each year (approximately 2.235 tons per day).

As noted above, the Palomar Transfer Station is permitted to accept up to 800 tons of solid waste per day and the Otay Landfill is permitted to accept 5,830 tons of solid waste per day. The landfill is anticipated to have capacity through 2021. Additionally, per the California Integrated Waste Management Act of 1989, the City of Carlsbad is required to divert at least 50 percent of its trash away from landfills, either through waste reduction, reuse or recycling programs. The City, through contract with Waste Management, maintains a recycling program that helps them achieve their required diversion rate. The proposed project would be required to comply with all federal, state, and local statutes and regulations related to solid waste. Therefore, the impact is considered less than significant.

Energy

CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see PRC Section 21100(b)(3)). Based upon the California Statewide Residential Appliance Saturation Study (2004) prepared for the California Energy Commission (CEC) the average electricity usage for a dwelling unit per year is 5,941 kilowatt hour (kWh) and the Daycare facility is expected to demand energy similarly to that of an Elementary school, which is estimated by the South Coast Air Quality Management District (SCAQMD) to require 5.9 kWh per single family unit per year. The project's energy consumption is discussed in detail in Section 5.7, Greenhouse Gas Emissions. As identified in Section 5.7, operation of on-site development would consume an estimated 7,772,230 kWh/year of electricity for the proposed project.

The residential portion of the proposed project is estimated to use 2,947,310.5 cubic feet (CF) per month of natural gas. Estimates for the Daycare facility are expected to demand less than but similar to that of a hotel which would demand as much as 4.8 CF/SF/month for a total of 9,600 cubic feet per month. The project would therefore demand 35,482,926 cubic feet per year. Additionally, since one MMBtu is commonly equated to 1,000 cubic feet of gas the project would consume 34,482.93 MMBtu of natural gas per year. Additionally, operation of the project would involve consumption of regular gas associated with automobile trips to and from the project site. This discussion is provided in Section 5.7 of this EIR.

The proposed project will require the extension of electrical and natural gas infrastructure to serve the project site. However, the project will incorporate energy conservation measures beyond Title 24 energy standard requirements which will achieve at least a 20 percent energy savings. Therefore, the project does not include any components that would be considered unnecessary, wasteful, or inefficient in terms of energy consumption. In addition, energy infrastructure needed to support the project (e.g., natural gas, electricity) is available and the project would not require a substantial new source of energy. The proposed project would also involve the use of natural gas associated with building heating, cooking, and

water heating; however, the project would utilize Energy Star or equivalent on all appliances. Project operations would also involve the use of gasoline associated with vehicle travel. While this represents an increase in the use of fossil fuels, the use of such fuels is not considered to be in a manner that is unnecessary or wasteful.

Offsite Improvements

Implementation of the proposed project will require construction of sewer, water, and reclaimed water facilities, which will involve some construction activity off-site to connect into existing facilities. The sewer and water connections are in the immediate vicinity of the Master Plan property line (see Figure 5.15-2). The reclaimed water line would connect from a point at the intersection of Harwick Drive and Tamarack Avenue, then be constructed within Tamarack Avenue to a point immediately east of Simsbury Court (within an existing easement) to connect into the Master Plan project site. These improvements would result in short-term air quality and noise impacts for the extent located within existing right-of-way. Where new disturbance would occur, the impacts associated with these improvements have been considered as part of the overall project footprint and so have been evaluated in terms of other environmental issues including cultural resources and biological resources. As noted, implementation of mitigation measures identified in Sections 5.3 Air Quality, 5.4 Biological Resources, 5.7 Greenhouse Gas Emissions and 5.9 Hydrology and Water Quality would be applicable to these improvements and would be less than significant with implementation of mitigation measures. Furthermore, construction activities would have to adhere to the construction time periods and regulations for reducing construction equipment noise (e.g., maintaining properly equipped muffler system) as required by City of Carlsbad Noise Ordinance 8.48.0101.

5.15.4 Level of Significance Before Mitigation

As described above, proper implementation of the proposed project design measures and conformance with all applicable regulatory/industry standards would avoid or reduce impacts below a level of significance.

5.15.5 Environmental Mitigation Measures

Mitigation measures identified in Sections 5.3 Air Quality, 5.4 Biological Resources, 5.7 Greenhouse Gas Emissions, and 5.9 Hydrology and Water Quality will reduce the impact to drainage facilities to a less than significant level.

5.15.6 Level of Significance After Mitigation

Implementation of mitigation measures identified in Sections 5.3 Air Quality, 5.4 Biological Resources, 5.7 Greenhouse Gas Emissions and 5.9 Hydrology and Water Quality will reduce the environmental impact associated with construction of drainage facilities to a level less than significant.

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